DOCUMENT RESUME

ED 284 249 CS 210 677

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TITLE Audience Perspectives on the News: Assessing Their Complexity and Conceptual Frames.
PUB DATE Aug 87
NOTE 43p.; Paper presented at the Annual Meeting of the Association for Education in Journalism and Mass Communication (70th, San Antonio, TX, August 1-4, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Audience Analysis; *Cognitive Processes; Economic Factors; *Mass Media Effects; Media Research; *News Media; *Political Attitudes; Protocol Analysis; Use Studies
IDENTIFIERS Audience Response; *Media Use; News Topics

ABSTRACT

A study investigated audience news comprehension, focusing on objective knowledge questions measuring "acquaintance with" as contrasted to "knowledge of" as indexed by cognitive complexity and the frames of cognitive structure. A single continuing story--the Tax Reform bill that was moving through the United States Congress at the time of data collection--was selected as an issue salient enough to be at least somewhat familiar to almost all respondents but also complex enough to elicit a variety of interpretations. Subjects, 567 Wisconsin adults, interviewed by telephone in 1986, responded to a series of open-ended questions that allowed them ample opportunity to discuss tax reform and that covered the general areas of perceived effects, actors, and causes. Results indicated that many respondents saw the issue of tax reform in nonobvious ways, thinking more about the law's impact on society or the economy as a whole than in terms of their own "pocketbook." Results also yielded the surprisingly weak relationship of complexity and education. Findings showed a stronger partisan identification than might have been expected, given the nonpartisan nature of the issue under consideration. Strength of partisanship and strength of independence were strongly related to both complexity and certain frames, particularly party frames and social benefits. Findings suggested that structural variables have a greater impact on knowledge than on complexity, and may operate indirectly via media choice and patterns of media use and information processing strategies. (References and tables of data are appended.) (NKA)

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# Audience Perspectives on the News: Assessing their Complexity and Conceptual Frames

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Paper presented to the Association for Education in Journalism and Mass Communication, Communication Theory and Methodology Division, San Antonio, Texas, August 1987.

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CS 210677

AUDIENCE PERSPECTIVES ON THE NEWS:

ASSESSING THEIR COMPLEXITY AND CONCEPTUAL FRAMES

The goal of understanding "what people get" from exposure to news offers a very broad mandate to those who study media effects. Limited time and resources, however, have traditionally forced researchers to confine their search for effects to a more restricted set of informational and persuasive criteria. For example, specific "facts" contained in news stories have constituted the criteria for informational effects. Knowledge is thus measured by a necessarily small number of "objective" pre-determined questions asked of survey respondents.

The usually high Alpha coefficients of reliability obtained for indices of objective knowledge measures have masked key assumptions underlying the larger questions of validity in conceptualization and measurement of knowledge gain among audience members. Three of these assumptions are most pertinent here:

The first assumption is that of content validity -- that the itemsused represent an adequate sample of the domain of knowledge under investigation. Because names and other specific elements of content are easier to incorporate in questions than are more abstract principles and context, the assumption of adequate content sampling is on shaky footing. There is apt to be bias too in the selection of noncontroversial but narrow "factual" items and in the avoidance of material that is less obviously verifiable. Second, we assume that the domain of knowledge as measured represents knowledge that is somehow important to the function of the varied segments of the audience. What

is important information for one person may be irrelevant to another. Challenges to this assumption have a long history in the social sciences; more recently this theme has been echoed most strongly in communication research by Brenda Dervin (1980).

Finally, the objective measurement of knowledge must assume that the assessment of the amount of "facts" known represents an adequate estimate of the utility of knowledge in helping the person to solveproblems or to serve other desirable objectives. A set of "morselized"facts, however large in number, cannot serve as an adequate basis for personal action unless the discrete pieces of information are organizedand structured in such a way as to be readily accessed and put into meaningful use (Lane, 1962). The problematic nature of the third assumption is recognized in the familiar distinction between "acquaintance with" and "knowledge about" which dates back at least to Park (1940) and according to Roshco (1975) earlier to the 19th century and Hegel and William James. We must be acquainted <u>with</u> in order to know <u>about</u>, but acquaintance <u>with</u> may or may not lead to deeper contextual and procedural knowledge. Knowing that a person possesses specific "facts" tells us nothing about his or her capacity to use knowledge intelligently (Almond and Verba, 1965). This is not to denigrate the work of Robinson and Levy (1986), who have made an excellent attempt to study factual knowledge under the general heading of "news comprehension" in terms of the main points of stories as stipulated by the journalists who produced them. Our goal is to extend the idea of news comprehension from the audience point of view. The present research attempts to examine the distinction between these two

forms of knowledge, with objective knowledge questions as measuring "acquaintance with" as contrasted to "knowledge of" as indexed by cognitive complexity and the frames of cognitive structure.

Despite the limitations of objective measures of knowledge, we should recognize their contribution to our understanding of audience behavior. In the past 15 years, they have served well as construct validating criteria for a host of audience orientations: gratifications sought, media reliance, images of media, attention, and information processing strategies. In varied ways, these orientations have examined the assumption of audience activity -- that contrary to simple stimulus-response models, persons act and react to media messages in ways that produce differential effects from a given set of messages. Thus, objective measures of knowledge have helped us to understand the effects of "what people bring" (e.g., motivation, images) to the communication situation. Objective measures, unfortunately, tell us little about what happens during and after the communication exposure situation. They are important residuals of media exposure, but are inadequate representations of "what people get" from the media.

Concern with audience orientations and activity that started in the early 70s coincided, quite accidentally it appears, with a similarly dramatic shift in social psychology from stimulus-response behavioral paradigms to cognitive models of human behavior. During the 60s, behaviorally oriented social facilitation studies had generated many contradictory findings that potentially could be resolved by postulating thought processes as interacting with stimuli to produce differential outcomes.

Cognitive experimental psychologists have investigated the physiological constraints on such thought processes while cognitive social psychologists have sought their antecedents in social learning situations. Although its roots date to Gestalt psychology in the early part of this century and to Bartlett (1932), the "cognitive revolution" in psychology really developed in the past 20 years (cf. Neisser, 1967). What has emerged in social psychology is a replacement of the S-R model with an O-S-O-R model (Markus and Zajonc, 1985). The first O implies "what people bring" to the situation while the second O can be seen as part of "what people get" from the stimulus. The model and its attendant theory and research have obvious implications for media effects analysis, although we should be aware that nowhere in the cognitive psychology or social psychological literature are communication and media variables of concern. The central postulate of cognitive psychology is essential, however: that study of the person's information processing and cognitive structures are essential data to the understanding of human behavior. By extension, then, the analysis of the process and effects of mass communication should study the processing of media messages and how they are structured by various segments of the audience. The free verbal responses of the audience member seems to be data indispensable to such analyses.

The cognitive perspective obviously implies a much broader definition of "what people get" from the news than is found in objective measures of knowledge. It requires that we somehow measure the representation of news content from the point of view of the audience member -- his or her construction of a news item or event after exposure. Facts, or

knowledge in the usual objective sense may or may not enter heavily into the processing of information and cognitive structuring. The exact way of collecting and analyzing these audience constructions is by no means clear.

The choices for eliciting and for analyzing information processing and structuring are many. At the formal extreme are controlled experiments of cognitive psychology in which the stimuli are manipulated and systematically varied and viewing conditions are optimal. The attempt is to establish general principles across subjects and individual differences are not usually an issue. At the other informal extreme are ethnomethodology and similar techniques that attempt to capture individual processes and structures as fully as possible (Lane, 1962; Graber, 1984). This retains the natural conditions of "noisy" communication, but the number of cases studied is often small and comparison across individuals is difficult.

We have chosen to adopt a strategy that lies somewhere in the middle of the formal-informal continuum. Because our interests included locating the origins of cognition in social structural terms, we chose to maximize the representativeness of our sample through survey research at the cost of experimental control. In an earlier study (Kosicki, McLeod and Amor, 1987), we attempted to measure the respondents' structuring of news by allowing them to choose to describe any story that they recalled from the news recently. Although there was some convergence on story choice (e.g., the Achille Lauro hijacking incident and Star Wars), the variability across story types overwhelmed the analysis.

In the present study, we picked a single continuing story -- the Tax Reform bill that was moving through Congress at the time of data collection. The story met several of our criteria for "stimulus" selection: it had received heavy coverage over several months in all media; it had a large number of potentially wide-ranging effects and thus could be understood on a number of levels; it had social implications but because everyone pays federal income taxes, self-interest was also involved; it had political as well as economic implications; and was billed as "tax simplification" but it was also inherently complicated. In short, it was an issue salient enough to be at least somewhat familiar to almost all respondents but also so complex as to bring out a variety of interpretations.

The selection of a single story parallels the strategy used by Sears and Citrin (1985) in their analysis of the Proposition 13 "tax revolt" in California; however their interests and analyses were quite different than those employed here.

Another set of choices were the kinds of questions and probes to use in following up on our opening statement: "As you know, Congress recently approved some changes in the federal income tax. I'd like to ask you how you feel about this." Cognitive social psychology was some help on this in that their work indicates the importance of perceived consequences, causes, and actors-groups involved when a person encounters an event or social issue (Schank and Abelson, 1977; Taylor and Crocker, 1981; Fiske and Taylor, 1984; and especially Lodge, 1985). We developed appropriate questions in each of these areas.

The most difficult decisions involved the coding of the open-ended

responses. Theoretical as well as methodological issues came into play here. Fortunately, there is a growing and highly relevant body of literature to draw on here from a group of scholars operating on the border of social psychology and political science. Graber (1984) Fiske and Kinder (1981), Lau (1986), Lau and Sears (1986), and Kraus and Perloff (1985) as examples, make strong and compelling cases for taking cognitive research out of the laboratory and for measuring "schema" directly in a real world setting. Lau and Sears suggest the use of open-ended survey questions for this purpose. A different source of justification for open-ended questions comes from the debate over the advantages and disadvantages of such questions among survey research methodologists (Schuman and Presser, 1981).

Lau (1986) argues that investigating cognitive schemas we must gobeyond the search for general psychological principles to look for and identify sources of individual differences in political schema as represented in the free responses to open-ended questions. His research shows that individuals are consistent over time in their use of party, candidate schema, etc. and further that these schemata have implications for how people function more widely in the political system. Other supportive evidence is found in Kinder and Mebane (1983), Sears and Citrin (1985), and Lau and Erber (1985). The stability of individual structuring (whether called schema or something else) shown across time and issue is a key assumption underlying the present research which examines only a single issue at one point in time.

Our coding involved giving eight coders extensive training to code

eight distinct variables: number of words, facts and areas; whether parties and class-groups were mentioned; time frame; actors involved and the motives attributed to them; and perceived causes (details are given in Methods and Results section). After considerable coding revision, acceptable reliability levels were achieved.

The political cognition literature offers some helpful if contradictory aid in the analysis of our open-ended data. One source of contradiction is the variance in terminology used. Markus and Zajonc (1985) list some ten terms which have similar reference to the person's organization of cognitions: inferential sets, hypotheses, personal theories, scripts, themes, frames, categories, prototypes, attitudes, and schemas. The last seems to be most popular in recent literature. At the risk of adding more to the terminological confusion, we propose to add yet another term, perspective, to the list. We use the term to denote views of the world focused on specific topics but emanating from the person's location in social structure and the experiences and communication patterns that reflect such a position. This definition is intended to be consistent with that of Shibutani (1966) and Berger and Luckmann (1966).

Perhaps the most difficult decision is how to combine, hypothesize,and analyze the data after coding. The political cognition literature is again instructive in revealing two rather divergent approaches to the conceptualization and analysis of individual's cognitive verbalizations. The first approach is hierarchical in that more is better from the standpoint of the political system. Converse (1964, 1975), for example, invokes the concept of level of

conceptualization which he indexes by the degree to which the person is able to match positions on various political issues with a liberal-conservative ideological scale. The exclusively ideological focus seemed too narrow for our purposes. Another hierarchical concept is that of political sophistication (Neuman, 1986) which is defined only indirectly through three less abstract dimensions: salience (interest, attention to news media, involvement in political process etc.); knowledge (of figures, issues, structures, groups) and conceptualization (differentiation, integration). Because we wish to look at media use as an antecedent of rather than as a part of cognition, salience is of little use to us. This is also true for knowledge because we want to contrast objective knowledge and cognitions rather than to merge them. Conceptualization, however, is very relevant. Neuman operationally defines its differentiation component as the number of discrete, concrete elements of political information that the individual used during the course of a long in-depth interview. Its complementary component, integration, was defined as the use of abstract concepts in the structuring of belief elements. A similar notion has been investigated in laboratory settings by social psychologists (cf. Crockett, 1965; Markus, 1977).

Our hierarchical dimension, complexity, parallels Neuman's conceptualization but places greater emphasis of the respondent's use of diverse perspectives in the analysis of the tax reform bill. As will be discussed later, our measures of complexity included the number of codeable words, facts, areas, causes, and motives as well as whether a time frame was used and whether both positive and negative

consequences were reported. The theoretical rationale is that the greater the complexity with which information is held, the more able the person will be to deal with new information and situations. Thus complexity may be seen as a quality through which knowledge can be translated into action.

Our second set of dimensions of perspectives is called frames in that they operate as non-hierarchical categories that serve as forms or major headings into which any future news content can be filled. This idea resembles closely that of "categorization processes" in experimental social psychology (Higgins and King, 1980). Four broad dimensions of frames were analyzed: time frame of anticipated consequences; group schema, party and class; the locus of anticipated effects, for the person him/herself, the economy or the society; and two measures summed across perceptions of three sets of political actors, cynicism about serving the actors own interests and their activity benefiting society.

The group schemata were seen as potential mediators of processing news. Party schema tend to sensitize the person to stories with political underpinnings for example. Class schema represented a focus on differential benefits to different segments of society and might alter subsequent behavior accordingly. Locus of effects could indicate a narrow concern for personal effects, or perception of broader impact on the economy or on the total society. Because of the perception that the political actors in tax reform were serving their own interests, we might expect that this would serve to lessen interest in future information while the filter of social benefits might tend to

facilitate the processing of new information about the broader implications of the bill.

This set of frames would seem applicable to the capture of individual response to a wide range of public and political issues. It is likely, however, that the salience or importance of any given frame would vary considerably from issue to issue. Further, the patterning of frames into dimensions might also be different across various types of issues.

Within the framework presented above, the present study tries to deal with several interrelated research questions. The first is how people make sense of an important public issue or event such as tax reform. People may construct that issue for themselves much differently than newspapers and television would lead us to believe.

To help us understand how people make sense of such important public issues in the news, we have attempted to create some concepts suggested by recent work in social psychology and political cognition, and measure them through the use of open-ended survey questions. Several important theoretical and empirical questions are relevant here: Can open-ended survey questions be asked and coded to adequately represent the complexity with which people view such issues? Furthermore, what are the relevant dimensions or cognitive frames that people use to structure their thinking about such matters?

Assuming that concepts such as Complexity and Frames can be theorized and measured, what about their validity? Another way of examining such concepts would be to inquire about their demographic, cultural and political antecedents. That is, do people's structural locations in the social system, as well as their cultural and political values influence

their learning from the news?

## METHODS

### Sampling

The sample consisted of 567 adults in Dane County, Wisconsin, who responded to telephone interviews conducted in late October 1986. The sample was drawn in a two-stage process in which telephone numbers were systematically sampled from the Dane County telephone directory. These numbers were adjusted to reflect the known distributions of private lines at prefixes throughout the county. In addition, a variant of standard added-digit dialing procedures was used to adjust the telephone suffixes to provide access to unlisted numbers (Sudman, 1983; Groves and Kahn, 1979).

Interviewing was conducted by graduate students and advanced undergraduates in a Communication Research Methods course. All interviewers received intensive training in interviewing procedures with special emphasis on open-ended questions and probing. All interviews were authenticated by call-backs.

Because Dane County includes the state capital, Madison, and the university, the sample was relatively young and well-educated. The median age of our sample was 36, about five years younger than that of the U.S. adult population; 41 percent had completed college, in contrast to about 17 percent for the nation in the 1980 Census. Sex was reasonably well distributed, with 55.7 percent females.

### Measurement

A two-page series of open-ended questions were used to allow

respondents ample opportunity to discuss tax reform with the interviewers. These questions covered the general areas of perceived effects, actors and causes. Interviewers were instructed to probe with standard questions. These questions were designed to invoke respondents discussion of various aspects of tax reform as a social event or issue while minimizing the influence of the researchers' structuring the responses (Lau and Sears, 1986; Schuman and Presser, 1981).

The following open-ended questions were asked:

As you know, Congress recently approved some changes in the federal income tax. I'd like to ask you how you feel about this.

What effects do you think the tax reforms will have?
(Probe) What about/Anything about you and your family?
(Probe) What about/Anything about business?
(Probe) What about/Anything about the country as a whole?

Presidents and members of congress have unsuccessfully spoken of changing the U.S. income tax system since the early 1900s. Why do you think the tax reform was passed now?
(Probe) Any other reasons?/What else?

What individuals or groups were involved with the tax reform?
(Probe) What individuals or groups favored it? Why?
(Probe) What individuals or groups opposed it? Why?

Coding of the resulting protocols proceeded in several stages. Researchers first read a sample of open-ended responses for two general purposes. One is to examine the empirical potential for constructing those variables that are measures of the theoretical concepts employed. The other is to develop a precise and specific coding scheme to guarantee adequate inter-coder reliability.

Researchers then created more than 30 variables to be coded from the protocols which range from a few words or "Don't know" to several pages in length. The development of the variables was guided by the general

theoretical framework discussed earlier. However, an inductive process was a necessary part of the procedure in that no one could foresee the incredibly diverse set of responses to these open-ended questions. This integration of both deductive and inductive procedures is consistent with the general suggestions by Lodge (1985) for measuring political knowledge and knowledge structure.

Measurement: Variables Coded

Eight coders were trained to code the variables after reading the protocols. These variables include:

* Number of words (not including articles and pronouns) recorded by the interviewers
* Number of facts mentioned in the protocols
* Number of areas (respondent and his/her family, business and economy, and society as a whole) being perceived to be affected
* Class perception (differential benefits)
* Political party mentioned or not
* Time frame (short term or long term effects/benefits)
* Actors involved
* Motives of the actors
* Perceived causes

Most of the variables were coded on the basis of manifest content of the protocols. However, coders were also instructed to make judgments about the latent content of certain answers. Variables created on the basis of latent coding were not included in the analyses reported here except for respondents' attitude toward tax reform.

A small sample of the questionnaires was coded by each of the eight coders for the purpose of assessing inter-coder reliability. In computing inter-coder reliability, each of the independent coders was treated as being an item of a common scale and correlations among them with regard to the codings of the same variable were computed. For quantitative variables, such as number of words and number of facts,

Cronbach's alpha was computed as an indicator of inter-coder reliability. For those ordinal and qualitative variables, reliability was assessed by a measure of inter-coder agreement above chance in the manner suggested by Krippendorff (1980:138-139).

The reliabilities for all the variables were judged to be acceptable. For the quantitative variables, the Cronbach's alphas range from .79 to .99. For those ordinal and qualitative variables, Krippendorff's agreement coefficients range from .70 to .90.

Measurement: Indices from open-ended questions

A different problem of reliability obtains in constructing indices based on these open-ended indicators. A crucial theoretical construct, cognitive complexity, was measured by the combination of several variables:

* Number of words except articles and pronouns recorded by the interviewers
* Number of facts about tax reform issue provided by the respondents in the course of their answers
* Number of areas (self, business, country and other) perceived to be affected
* Number of causes cited by the respondents. These potential causes include President Reagan and the administration, Congress, special interests, business, general economic situation, public demand, and the upcoming congressional election.
* Number of motives of the actors involved. These were coded as benefiting the actors themselves or achieving broader social benefits, fairness, simplicity, or equality of the tax system.
* Time frame employed in the respondents' answers. It includes time frame implied, either short term or long term effects or benefits cited.
* Respondents' perceptions of both positive and negative consequences of tax reform

(Cronbach's alpha=.74)

The frames of reference are measured with a series of binary variables indicating the presence or absence of eight referents in the

protocols of the respondents: effects on self, effects on the economy, effects on society and other institutions, references to political parties, differential benefits according to social class or status distinctions, whether or not multiple time frames were employed in thinking about the issue, beneficial effects for various social groups, and cynicism about the motives of the actors involved in tax reform. Each of the eight frames is potentially independent of the others, that is, one could use any combination of them. In practice, of course, patterns of use are apt to emerge.

Another index, respondents' knowledge about tax reform, was a combination of answers to four short-answer questions. The questions were:

* Under the new tax reform, what will be the maximum individual tax rate?
* Under the new tax reform, what rate would you have to pay?
* Can you name a United States senator who is actively involved in the issue of tax reform?
* When does the new tax reform become law?

(Cronbach's alpha=.54)

Measurement: Other indices

Knowledge

Current events knowledge index was based on the following questions:

* For some time the Russians have been urging the United States to give up a new defense program as part of the negotiations for nuclear arms reductions. What is the program the Russians are asking us to give up? (Strategic Defense Initiative or Star Wars)
* South Africa has been in the news lately because of the violence directed against the government's policy of racial segregation. What is the term used to define this policy of racial segregation? (Apartheid)
* Larry Speakes is a name frequently heard in the news. Can you tell me what his job is? (President Reagan's Spokesman)
* AIDS has been making headlines both here and abroad as scientists work to combat this usually fatal disease. Can you tell me what the initials A.I.D.S. stand for? (Acquired Immune

Deficiency Syndrome)
* Last year, Congress passed a law requiring the federal government to balance its budget within five years. What is this law known as? (Gramm-Rudman law)
(Cronbach's alpha=.75)

Political knowledge index was the sum of the correct answers to ten questions about the respondents' congressman, senators and their political opponents in the upcoming election and the terms of the offices. (Cronbach's alpha=.84)

Candidate issue knowledge was based on the questions with regard to senatorial candidates' positions on four issues, defense spending, economic sanctions against South Africa, 55 mile per hour speed limit, and Star Wars. One point was given for correctly identifying each candidate's position. The (Cronbach's alpha = .83)

Political Variables

Political partisanship and independence were measured in two ways. The first way was the traditional 7-point scale ranging from strong Republican to strong Democrat. The second way of measuring partisanship and independence was with two 7-point scales indicating strength of partisanship and strength of independence (Dennis, 1981).

Direction of political ideology was measured by summing two questions asking respondents to place themselves on 7-point liberal/conservative scales regarding economic policy and social behavior. Strength of political ideology was the folded scale of the direction of political ideology.

Political values, trust and efficacy, were factor scores saved from factor analyzing six items using 5-point scales. The questions were adapted from 1984 American National Election Study.

Media Variables

In addition to standard measures of exposure and attention to public affairs media content, both newspapers and television, several measures of media use were developed. Measures of time spent reading newspapers or watching television were the number of days using newspapers or watching television per week multiplied by the number of minutes per day. One was added to each value to eliminate zeros, then a log transformation was applied.

Newspapers read regularly were ranked according to their prestige. The New York Times and Wall Street Journal received a score of five, Chicago Tribune and Milwaukee Journal received four, Chicago Sun-Times and Milwaukee Sentinel received three, the local Madison papers, Capital Times and Wisconsin State Journal, received two, and USA Today and the university paper Daily Cardinal received one. Number of newsmagazines read was also used.

Media Images, according to McLeod, Kosicki, Amor, Allen and Philps (1986), are usefully organized along several dimensions, four of which are used in this analysis. First, many people have perceptions of media quality, and agree with statements that news is believable, ethical and generally of high quality. A second dimension is patterning, perceptions that media messages have patterns that can, over time, add up to a comprehensible picture of the world over time. This is in contrast to media as presenting a fragmented, and incomplete view of the world. Media are also seen as being or serving special interests in our society. A final image of the media is that of negative affect, the perception that news is mostly bad, and that reporters exaggerate and

sensationalize to increase profits.

Media reliance was obtained by the rankings of how much the person relied on newspapers and magazines, television and radio and friends and family for public affairs information. These rankings were summed to form the three dimensions of print, electronic and friends and family.

Twelve reasons for using the news media were factor analyzed to form three dimensions of motivations: Issue surveillance (e.g., see how candidates stand on issues, make up my mind how to vote), candidate surveillance (e.g., find out weak points of candidates I don't support, judge personal qualities of the candidates), and contest aspects (e.g., because the campaign sometimes gets exciting, because I enjoy seeing the candidates slugging it out).

Information Processing is a set of three variables created by factoring 13 Likert-scale items. The resulting variables are meant to represent a set of cognitive strategies people use when encountering media: Selective Scanning, a dimension that includes propensity to scan information on the TV news or in the newspaper, "paying attention only when a headline or photo catches my eye." Another item is "When listening to the TV news I hear a word or topic and then pay more attention." Active Processing denotes a recognition that news must often be interpreted and often it is necessary to "read between the lines" of the information given. A sample statement is, "When I'm using the news media, I always try to figure out what the real story is that they're not telling me." The third strategy is Reflective Integration. This includes thinking about the news after the act of viewing or

reading and trying to fit the information in to what else the person knows. This is frequently done through interpersonal discussion. See Kosicki, McLeod and Amor (1987) for details.

Measurement: Other Antecedents

Worldview is a cultural construct obtained by factoring ten variables into three factors called Pessimism, Fatalism and Positive. Worldviews are meant to include one's larger orientation toward the world in general. Briefly Pessimism presents a picture of the world as a hard place unlikely to get better for most people. Fatalism presents a worldview of passivity, detachment and an assertion of the futility of challenging one's fate. Positive denotes the world as a basically a good, fair place, with most people living untroubled lives. See Amor, McLeod and Kosicki (1987) for more details on these measures.

Five demographic items were used: gender, age, education, income and occupational status as measured with the standard Duncan Socio-Economic Index of occupational prestige.

## RESULTS

The feasibility of using a scale of cognitive complexity was the first research question examined. Positive evidence for building such a scale was found in a factor analysis of the seven potential complexity items (Table 1). A single factor emerged with a strong Eigen value and significant loadings for all items. The smallest loading (.45) is for the number of motives mentioned, probably a function of the fact that only 21% of the respondents mentioned a motive. Only 12% were unable to discuss the tax reform bill in a

meaningful way; 71% invoked a time frame with 13% using both past and present; 60% named a cause and about half indicated an attitude toward the bill and a similar proportion volunteered what they considered to be facts about the bill. Despite the varied nature of the components, the seven items produced an acceptable Alpha coefficient of .74.

Each of the seven non-hierarchical frames were used by a minority of the respondents (Table 2). A class schema was used more often than was a party schema (31% vs. 17%), but about half the sample used neither. About one-third saw the tax legislation as having an effect on either the self or the society while 13% located the dominant effect as being on the economy. Almost one-third of the respondents indicated a frame of cynicism toward tax reform efforts and one person in five stressed beneficial effects. It appears we were successful in identifying the frames used by the audience and that no one perspective dominated.

We had no a priori theoretical reasons for anticipating a particular structuring of the frames. Indeed, we believed the frames would group differently for different issues. Nonetheless, we factor analyzed the frames as a data reduction strategy. While procedures exist for the factor analysis of dichotomous data (Muthen, 1984, 1987), these were not available to us at the time of our analysis. As in interim strategy we used principal components factor analysis as recommended by Comrey (1973:204-205).

Three factors emerged from the factor analysis (Table 2). The first, Sociotropic, consisted of a strong positive emphasis on society and concern with class differentials and outcomes. It also included a lack of emphasis on effects on the self. The second factor, Conflict and

Cynicism, consisted of using multiple time frames, expressing cynicism about the motives of the political actors involved, focussing on the self, and moderate invocation of both political party and class frames. The third factor, Economic Progress, consisted of strong concern with the economic effects of the issue and more moderately, its supposed beneficial effects on the economy.

Knowledge, Complexity and Frames

Given the close conceptual relationship between "factual" knowledge and complexity, it is crucial to examine the relationship between the latter and the various measures of knowledge obtained through closed-ended questions in our interview schedule. It is clear from our results that complexity is at least moderately associated with all four indices of objective knowledge (Table 3). As would be expected, the relationship of complexity is strongest with tax reform knowledge (.40) than with knowing about current events (.36), candidates stands on issues (.34) or names of the candidates. Although all four coefficients are significantly different from zero, none is strong enough to represent complete identity between the concepts of complexity and knowledge. The fact that all four associations are of similar magnitude may indicate that the overlap is a conceptual connection rather than a statistical artifact of examining complexity and knowledge on the same issue; only a small proportion of the common variance between complexity and knowledge is topic specific. It is also true that the associations among the four objective knowledge measures (not shown in Table 3) are considerably stronger than each is with complexity.

The relationships of complexity and the knowledge measures with the non-hierarchical frame measures are also shown in Table 3. Complexity is related to all the frame measures, but especially to expressing multiple time frames and cynicism, to class differentials and effects on society. Weakest relations were shown with respect to effects on self and the economy and employing a party frame. Persons with complex perspectives also tend to focus on the nation, social rather than personal impacts, and to be skeptical about tax reform. Given the associations between complexity and the frame components, perhaps we should be cautious about assuming the frames are totally independent of the level of complex understanding.

Frames are also related to objective knowledge indices, although at much lower levels than those shown for complexity (Table 3). Those with more "factual" tax knowledge tended to use multiple time frames, to talk more in terms of the nation than of individuals, and to think of social benefits of tax reform. Yet they also showed some tendency to be cynical in their judgments.

Complexity and Its Antecedents

A more elaborate analysis of cognitive complexity was undertaken using an extended list of possible demographic, cultural, political and media antecedents (Table 4). The purpose of this analysis was to understand more about the origins of Complexity as distinct from traditional forms of political knowledge. Uncontrolled coefficients were examined along with controls for five demographic variables. Among the demographic variables, males and the more highly educated respondents tended to be more complex, although demographic variables

generally predict complexity less well they do the various forms of objective knowledge. Those respondents with fatalistic values hold less complex cognitions. Strength of both partisanship and independence are related to complexity after demographic controls. Strength of political feeling rather than the direction of commitment, as the traditional measure of party identification bears no relationship to Complexity.

Among the mass media antecedents, newspaper time is related to cognitive Complexity but more so it is the prestige of the paper read that seemed to be the crucial element here (Table 4). It is reasonable to suppose that media content should be examined as a source of variance in complexity along with its use by the audience. Images that people hold of the media also appear to play a role. Not surprisingly, those perceiving a pattern to the news tend to have more complex cognitions about tax reform.

Relying on friends and family for political information is negatively associated with Complexity (Table 4). Those using news for issue surveillance show higher levels of Complexity as do those most heavily exposed to both newspaper and television news. Finally, two strategies of information processing are related to complexity even after demographics are controlled. Those skimming and scanning the news are less likely to be cognitively complex than others. Those most actively processing the news are more complex. These results are as predicted; however, the failure of those most likely to discuss and reflect on the news (Reflective Integration) to be more complex was not expected. Instead, they are higher only on factual knowledge (data not shown).

Antecedents of Tax Reform Frames

In order to better understand the cognitive frame dimensions used for tax reform news and to distinguish them from complexity, we ran the same antecedents against all of these cognitive variables. We had conducted an earlier logit analysis using the single dichotomous frames. This proved cumbersome and, although they will not be reported here, will be used to disaggregate the frame dimensions in order to better interpret the findings of the regression analysis of the three frame dimensions.

None of the five demographic variables was related to the first Sociotropic frame dimension (Table 5). Political variables similarly did not influence this first factor. Among the 16 non-media variables, only low fatalism as part of the world view block was associated with using a sociotropic frame.

Media variables fared somewhat better in predicting the Sociotropic frame. Spending time with both newspapers and television and the reading of newsmagazines were significant on this first factor. The sociotropic frame was also likely to be used by respondents motivated by judging political candidates, by reading public affairs material in the newspaper and by paying attention to such content on television news.

Conflict and Cynicism, the second frame dimension, contrasts to the first factor in being strongly predicted by demographic variables (Table 5). Those more highly educated and of higher occupational status tended to be more likely to use time and party frames, to be cynical and to concentrate on effects on self. Those who feel strongly

about politics, both independents and partisans, were higher on the second factor. Political values presented an interesting pattern with those high on personal efficacy but low on system trust being the most likely to use conflictual and cynical frames.

Among the media variables, reading a prestige newspaper was the best single predictor of Conflict and Cynicism (Table 5). Print use also played a role evidenced in time spent with newspapers and particularly with exposure and attention to public affairs content. Viewing of television public affairs programming but low reliance on information from it or from family and friends are associated with this dimension. A relatively critical image of news quality and highly active but non-scanning information processing strategies also characterize those high on Conflict and Cynicism. In general, the second frame dimension is much more strongly predicted than the other two dimensions.

Economic Progress, the third frame dimension, is characterized by an almost total lack of identifiable antecedents. Among the 37 individual variables in Table 5, only one is associated with the third factor. Males are more likely than females to cite effects on the economy and potentially beneficial impact of tax reform in their open-ended responses. Several other variables are significant at the zero-order level, but these do not hold after demographics are controlled.

Effects of Complexity

An important question about cognitive complexity and frame dimensions concerns what role they might play with respect to other effects of mass media exposure. To test this possibility, we analyzed six effect variables to ascertain the extent to which Complexity and the three

frame dimensions would predict such effects over and above the prior effects of the five demographic variables and objective tax reform knowledge. Two analyses, conducted separately for complexity and for the set of three frame dimensions, are shown in Table 6.

While the results for Complexity vary in strength among the six effect variables, significant increments are added to the variance accounted for in all comparisons. That is, those with more complex cognitions pay more attention to tax reform and are likely to see the issue as salient. They also tend to be politically interested, involved and knowledgeable, and are likely to have discussed the current campaign more than have other respondents. This activity pattern of cognitively complex respondents holds even after demographic and objective tax reform knowledge measures are controlled.

The block of three frame dimensions also adds significant increments to the variance accounted for in each of the six effect variables (Table 6). The contribution of each of the three dimensions varies across the six comparisons, however. The Sociotropic dimension predicts to higher levels of current events knowledge, but is unrelated to all other dependent variables. Conflict and Cynicism shows the strongest effects overall in being highly participatory. Only with respect to the salience of tax reform as an issue does the relationship fail to reach significant levels. Economic Progress, which was so poorly identifiable in terms of its potential antecedents in Table 5, here shows clear effects in having higher levels of tax reform attention and salience and political interest. No effects were shown for the two campaign variables.

## CONCLUSIONS

This study has had several main objectives. Most generally, we have tried to develop a method of using open-ended survey question technology to measure some concepts current in cognitive psychology and useful in mass communication research. We have also sought to develop with this technology a thorough understanding of how individuals construct an important public news story. Additionally we have presented preliminary evidence regarding the demographic, cultural and media antecedents of the concepts derived from our open-ended response data and the effects of these concepts. This paper is a progress report of this ongoing research program and the conclusions should be read as directions of future development.

Our experience has been that the open-ended questions with a minimal number of standard probes can elicit very detailed, interesting responses about an important public issue such as tax reform. These responses were structured by the respondents' understanding of these issues, not by the researchers. Beyond their descriptive functions, the protocols resulting from such questioning can be reliably coded and meaningfully analyzed. Our combination of items into an index of Complexity achieved good reliability for a first effort. The question of validity was addressed by examining the correlations among the items coded from open-ended responses with measures obtained from more traditional closed-ended questions. Here we saw moderately strong correlations among our new measure and more standard measures of knowledge. This indicates that while the new measure is similar to the usual knowledge measures in some ways, it is not identical to them.

It is important to note that the questions, probes and coding scheme we used indicated that focussing on actors, motives and effects, to be quite feasible, flexible and adaptable. We think a similar system could be used to examine other issues and perhaps even media content.

And what have we learned from our efforts to understand people's construction of tax reform? While no simple answer is possible, we have seen that many people see the issue in somewhat nonobvious ways. For example, policymakers and journalists stressed the bipartisan or even nonpartisan nature of the issue a great deal. This would lead one to think that people would not use their partisan frames to organize their thinking about this issue. However, note that about 17 percent of the sample used party as an organizing frame for the information.

Another theme running throughout the news coverage was that of self-interest. Our data suggest that while this was a very salient consideration for many people, only about one-third of the respondents mentioned themselves or their families initially when we asked them about supposed effects of the legislation. Many more people, of course, could personalize the effects, but the evidence indicates that more people were thinking about the law's impact on society (35.3%) or the economy as a whole (12.9%). This supports the proposition advanced by Kinder and Kiewiet (1981) that "sociotropic," or social implications are frequently more central for many people than their own "pocketbook" when evaluating important national concerns. This idea is also advanced by the general lack of association between structural variables, particularly income, and complexity. This is somewhat surprising in that tax reform is fundamentally an economic and political issue.

Another surprise of sorts is the weak association of education with complexity. Although complexity is clearly a set of sophisticated or at least distinctive strategies or framework for considering public issues, these strategies are largely independent of formal education.

If structural variables are somewhat surprising in their lack of association, political variables presented surprises in that they appear stronger than one might have expected given the nonpartisan nature of the issue under consideration. The usual measure of political direction, the standard 7-point scale of party identification, showed itself to be useless in understanding individual's cognitive complexity or frames. However, strength of partisanship and strength of independence were both strongly related to both complexity and certain frames, particularly party frames and social benefits. While it might seem somewhat contradictory that both independence and partisan strength should be related to similar variables, it should be noted that these are not necessarily contradictory. As Dennis (1981) and others have pointed out, partisanship and independence can be considered as two orthogonal dimensions. We have found (not shown in tables) that the Independent Partisan Supporters, a group of people who are both independent and partisan, are the ones who stand out most strongly in terms of complexity and use of multiple frames. These are people who generally operate within a party framework, but are not cognitive shortcutters or satisficers. Rather, they tend to think of politics in multiple dimensions that are not easily simplified.

The role of media in framing is not well understood. There are systematic relationships between them, particularly in the areas of

public affairs, exposure and information processing. It is noteworthy that the contribution of media to complexity is greater than that of education. Structural variables appear to impact more on knowledge than on complexity, may operate indirectly via choice of media and patterns of media use and information processing strategies. One might also speculate that education is a necessary but not sufficient condition for complexity in that education may promote media and interpersonal communication habits. Since education occurs in the early life, without further enhancement by media or other socialization agents its effects might be nearly invisible.

Because we focussed our data collection intensively upon a single issue we do not have direct evidence that our measures of Complexity and Frames are generalizable to other issues. However, we have conceptualized Complexity very generally to focus on basic thinking styles (multiple time frames, causes, pros and cons, etc.) that seem unlikely to vary much across important issues. Frames, we would argue, are generic categories generally applicable to most public issues. The frame dimensions, however, are more closely tied to the specific tax reform issue. We would expect these factor structures to be somewhat different for different types of issues. Finally, this study suggests a useful approach to uses of cognitive constructs in the analysis of how individuals make sense of political issues.

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TABLE 1

Descriptive Statistics and Factor Analysis of Complexity Items.

| Complexity Items | Percent Mentioning Any | Mean | S.D. | Factor Loading |
|---|---|---|---|---|
| Number of codeable words | 87.7 | 28.35 | 25.08 | .81 |
| Number of areas mentioned | 87.7 | 2.18 | 1.20 | .77 |
| Multiple time perspectives | 71.4 | .84 | .66 | .71 |
| Positive & negative attitudes | 48.9 | .56 | .63 | .57 |
| Number of facts mentioned | 47.3 | .95 | 1.41 | .56 |
| Number of causes mentioned | 59.6 | .93 | .96 | .51 |
| Number of motives mentioned | 20.5 | .33 | .73 | .45 |

Note: Factor analysis is a principal components solution with varimax rotation. Eigen value = 2.84, percent of total variance = 40.6.
n=567

TABLE 2

Descriptive Statistics and Factor Analysis of Frame Items.

| Frames | Mean | S.D. | Factor I Sociotropic | Factor II Conflict & Cynicism | Factor III Economic Progress |
|---|---|---|---|---|---|
| Sociotropic | | | | | |
| Effects on society | .35 | .48 | .91 | .04 | -.18 |
| Effects on self | .32 | .47 | -.67 | .57 | -.31 |
| Class | .31 | .46 | .63 | .39 | -.09 |
| Conflict & cynicism | | | | | |
| Time frame | .71 | .45 | .24 | .69 | .28 |
| Cynicism | .31 | .46 | .11 | .55 | .03 |
| Political party | .17 | .37 | -.06 | .40 | .00 |
| Economic progress | | | | | |
| Effects on economy | .13 | .34 | -.09 | -.11 | .92 |
| Beneficial effects | .21 | .41 | -.04 | .22 | .44 |

Note: Factor analysis is a principal components solution with varimax rotation. Eigen values = 1.80, 1.44, and 1.25; percent of total variance = 22.5, 18.0, and 15.7 (=56.2%).
n=567

TABLE 3

Standard Knowledge Measures by Complexity and Frames:
Partial Correlations Controlling for Five Structural Variables.

| | Standard Knowledge Measures | | | | Perspective |
|---|---|---|---|---|---|
| | Tax Reform | Events | Issues | Names | Complexity |
| Complexity | .40* | .36* | .34* | .31* | -- |
| Frames | | | | | |
| Sociotropic | | | | | |
| Effects on society | .11* | .11* | .04 | .04 | .27* |
| Effects on self | .02 | -.02 | .06 | .08 | .12* |
| Class | .09* | .13* | .08 | .10* | .33* |
| Conflict & cynicism | | | | | |
| Time frame | .21* | .18* | .12* | .16* | .62* |
| Cynicism | .10* | .15* | .13* | .09* | .43* |
| Political party | .08 | .13* | .05 | .12* | .14* |
| Economic progress | | | | | |
| Effects on economy | .12* | .06 | .01 | .05 | .14* |
| Beneficial effects | .13* | .05 | .10* | .11* | .23* |

n=567
*=$p \leq .05$

TABLE 4

Multiple Regression Analysis of Complexity:
Prediction by Demographic, Cultural, Political and Media Variables

| | Zero-Order | Demogr. Controls Partial r | R2 |
|---|---|---|---|
| Demographics | | | |
| Gender (male) | .14* | .12* | |
| Age | .03 | .05 | |
| Education | .20* | .12* | |
| Income | .14* | .07 | |
| Occupational status | .15* | .05 | 6.48* |
| Worldviews | | | |
| Fatalism | -.20* | -.15* | |
| Pessimism | .00 | -.02 | |
| Positivity | .03 | .01 | 2.31* |
| Political | | | |
| Strength of partisanship | .17* | .19* | |
| Strength of independence | .22* | .22* | 6.17* |
| Party identification | .03 | .05 | .21 |
| Beliefs/ideology | | | |
| Ideology (right) | .05 | .06 | |
| Strength of ideology | .11* | .09* | 1.14* |
| Political values | | | |
| Efficacy | .16* | .11* | |
| Trust | .01 | -.02 | 1.26* |
| Media time | | | |
| Newspapers | .20* | .16* | |
| Television | .05 | .05 | 2.30* |
| Prestige of newspaper | .29* | .24* | 5.21* |
| Number of newsmagazines | .13* | .08 | 0.58 |
| Media images | | | |
| Special interests | .01 | .02 | |
| Quality | -.06 | -.05 | |
| Patterning | .17* | .13* | |
| Negative affect - content | .06 | .05 | 1.95* |
| Media reliance | | | |
| Print | .19* | .01 | |
| Electronic | -.09* | -.07 | |
| Friends and family | -.18* | -.12* | 3.05* |
| Motivations | | | |
| Issue surveillance | .17* | .13* | |
| Candidate surveillance | .05 | .04 | |
| Contest aspects | .08 | .06 | 2.14* |
| Public affairs use | | | |
| Newspaper exposure | .25* | .20* | |
| Television exposure | .16* | .11* | |
| Newspaper attention | .18* | -.03 | |
| Television attention | .19* | .07 | 6.26* |
| Information processing | | | |
| Selective scanning | -.16* | -.15* | |
| Active processing | .10* | .10* | |
| Reflective integration | .09* | .08 | 3.09* |

Note: Coefficients shown are uncontrolled and partials controlling for five demographic variables and other variables in the set indicated.
n=567 $p \leq .05$

TABLE 5

Multiple Regression Analysis of Frame Dimensions:
Prediction by Demographic, Cultural, Political and Media Variables

| | Sociotropic | | | Conflict&Cynicism | | | Economic Progress | | |
|---|---|---|---|---|---|---|---|---|---|
| | Z-O | Part. | R2 | Z-O | Part. | R2 | Z-O | Part. | R2 |
| Demographics | | | | | | | | | |
| Gender (male) | -.03 | -.03 | | .00 | -.02 | | .16* | .16* | |
| Age | .02 | .00 | | .02 | .03 | | .05 | .07 | |
| Education | .01 | .05 | | .22* | .15* | | .07 | .03 | |
| Income | -.03 | -.03 | | .12* | .04 | | .08* | .04 | |
| Occupational status | -.02 | -.03 | 0.33 | .21* | .12* | 6.52* | .06 | .00 | 3.69* |
| Worldviews | | | | | | | | | |
| Fatalism | -.10* | -.13* | | -.14* | -.07 | | -.08* | -.07 | |
| Pessimism | .05 | .05 | | .00 | .04 | | -.04 | -.05 | |
| Positivity | -.07* | -.07 | 2.21* | -.04 | -.03 | 0.59 | .09* | .06 | 1.08 |
| Political | | | | | | | | | |
| Str. of partisanship | .02 | .04 | | .15* | .18* | | .04 | .03 | |
| Str. of independence | .06 | .08 | 0.61 | .18* | .18* | 4.77* | .09* | .08 | 0.57 |
| Party identification | .07 | .06 | 0.36 | .04 | .05 | 0.23 | -.06 | -.05 | 0.23 |
| Beliefs/ideology | | | | | | | | | |
| Ideology (right) | -.01 | -.01 | | .00 | .02 | | .06 | .04 | |
| Strength of ideology | -.02 | -.02 | 0.05 | .09* | .08 | 0.65 | .09* | .07 | 0.73 |
| Political values | | | | | | | | | |
| Efficacy | .05 | .06 | | .14* | .09* | | .09* | .07 | |
| Trust | .01 | .01 | 0.32 | -.09* | -.10* | 1.70* | .08* | .07 | 0.96 |
| Media time | | | | | | | | | |
| Newspapers | .11* | .11* | | .13* | .12* | | .07 | .04 | |
| Television | .11* | .10* | 2.24* | -.02 | .00 | 1.38* | -.01 | -.01 | 0.16 |
| Prestige of newspaper | .03 | .04 | 0.18 | .23* | .20* | 3.62* | .05 | .00 | 0.02 |
| Number of newsmagazines | .08* | .09* | 0.74* | .13* | .06 | 0.39 | .03 | .00 | 0.00 |
| Media images | | | | | | | | | |
| Special interests | .01 | .02 | | .00 | .02 | | .06 | .07 | |
| Quality | .05 | .05 | | -.11* | -.09* | | .01 | .00 | |
| Patterning | .07 | .07 | | .10* | .03 | | .08* | .07 | |
| Negative affect | -.04 | -.04 | 0.89 | .06 | .06 | 1.24 | -.03 | -.05 | 1.11 |
| Media reliance | | | | | | | | | |
| Print | .04 | .02 | | .10* | .07 | | .08* | -.01 | |
| Electronic | .00 | .01 | | -.10* | -.12* | | .06 | .05 | |
| Friends and family | -.10* | -.06 | 1.22 | -.10* | -.11* | 1.68* | .03 | .00 | 0.30 |
| Motivations | | | | | | | | | |
| Issue surveillance | .06 | .06 | | .19* | .14* | | .07 | .07 | |
| Candidate surveillance | .08* | .08* | | .01 | .02 | | .04 | .02 | |
| Contest aspects | .00 | .01 | 1.06 | .07 | .06 | 2.09* | -.01 | -.03 | 0.51 |
| Public affairs use | | | | | | | | | |
| Newspaper exposure | .12* | .09* | | .14* | .13* | | .07 | .03 | |
| Television exposure | .10* | .02 | | .10* | .09* | | .03 | .02 | |
| Newspaper attention | .07 | -.04 | | .14* | .09* | | .05 | .00 | |
| Television attention | .17* | .13* | 3.99* | .10* | .05 | 2.57* | .07 | .05 | 0.27 |
| Information processing | | | | | | | | | |
| Selective scanning | -.06 | -.06 | | -.17* | -.14* | | -.03 | -.02 | |
| Active processing | .05 | .04 | | .10* | .09* | | .03 | .03 | |
| Reflective integration | .06 | .05 | 0.77 | .04 | .02 | 2.80* | .06 | .08 | 0.72 |

Note: Coefficients shown are uncontrolled and partials controlling for five demographic variables and other variables in the set indicated.
n=567 $p \leq .05$

TABLE 6

Multiple Regression Analysis of Effects: Prediction by Demographics, Tax Reform Knowledge, Complexity and Frame Dimensions.

| Predictors | Tax Ref. Atten. Z-O | Part. | R2 | Tax Ref. Salience Z-O | Part. | R2 | Political Interest Z-O | Part. | R2 |
|---|---|---|---|---|---|---|---|---|---|
| Demographics | | | 19.23* | | | 5.85* | | | 13.85* |
| Tax reform knowledge | | | 21.13* | | | 0.93 | | | 5.51* |
| Complexity | .43* | .28* | 4.55* | .10* | .11* | 1.09* | .32* | .19* | 2.79* |
| Frame Dimensions | | | | | | | | | |
| Sociotropic | .07 | .07 | | .00 | -.01 | | .04 | .02 | |
| Conflict & cynicism | .14* | .14* | | .07 | .08 | | .28* | .18* | |
| Economic progress | .13* | .13* | 2.27* | .13* | .14* | 2.43* | .17* | .10* | 3.32* |

| Predictors | Current Events Know. Z-O | Part. | R2 | Camp. Discussion Z-O | Part. | R2 | Camp. Participation Z-O | Part. | R2 |
|---|---|---|---|---|---|---|---|---|---|
| Demographics | | | 26.42* | | | 7.77* | | | 13.07* |
| Tax reform knowledge | | | 9.35* | | | 2.52* | | | 3.20* |
| Complexity | .36* | .19* | 2.34* | .24* | .15* | 2.09* | .26* | .15* | 1.80* |
| Frame Dimensions | | | | | | | | | |
| Sociotropic | .10* | .11* | | .07 | .06 | | .07 | .06 | |
| Conflict & cynicism | .27* | .14* | | .20* | .11* | | .22* | .12* | |
| Economic progress | .14* | .04 | 1.96* | .05 | .01 | 1.45* | .09* | .03 | 1.53* |

Note: Coefficients shown are uncontrolled and partials controlling only for five demographic variables and tax reform knowledge. That is, partials for complexity do not include a control for the frame dimensions and vice versa.

n=567 $p \leq .05$